National Institute of Environmental Health Sciences

Crimean-Congo hemorrhagic fever: Current and future prospects of vaccines and therapies

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Abstract:

Crimean-Congo hemorrhagic fever (CCHF) is a tick-borne disease caused by CCHF virus (CCHFV), a nairovirus in the family Bunyaviridae. CCHF occurs sporadically in a number of countries in Asia, the Middle East, southeastern Europe and Africa. Patients may develop subclinical to severe hemorrhagic disease, with fatal outcomes in a substantial percentage of cases. Transmission usually occurs through contact with viremic livestock or patients or bites by infected ticks. The number of reported cases has increased in recent years, possibly due to global climatic change and human perturbations of biocenoses that may have led to the migration of tick vectors. There is currently no FDA-approved vaccine or specific antiviral therapy for CCHF. The classification of CCHFV as a WHO Risk Group IV pathogen and the lack of suitable animal models has caused progress in developing new prophylactic and therapeutic measures to be slow. Ribavirin is active against CCHFV in vitro, but its efficacy for human therapy has not been definitively demonstrated by clinical studies. CCHF-immunoglobulin is also in use, but without clear evidence of efficacy. In this article, we review the development of prophylaxis and therapy for CCHF and discuss future prospects for vaccine and drug development.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Tick-borne Disease

Tick-borne Disease: Crimean-Congo Haemorrhagic Fever

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content